

NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#12 TOMBSTONE FEDERAL LC23-760 (311°FSL&1617FWL,SEC.11)
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: TOMBSTONE FEDERAL LC23-760
Facility: SEC.11-T09N-R59W Wellbore: TOMBSTONE FEDERAL LC23-760 PWB

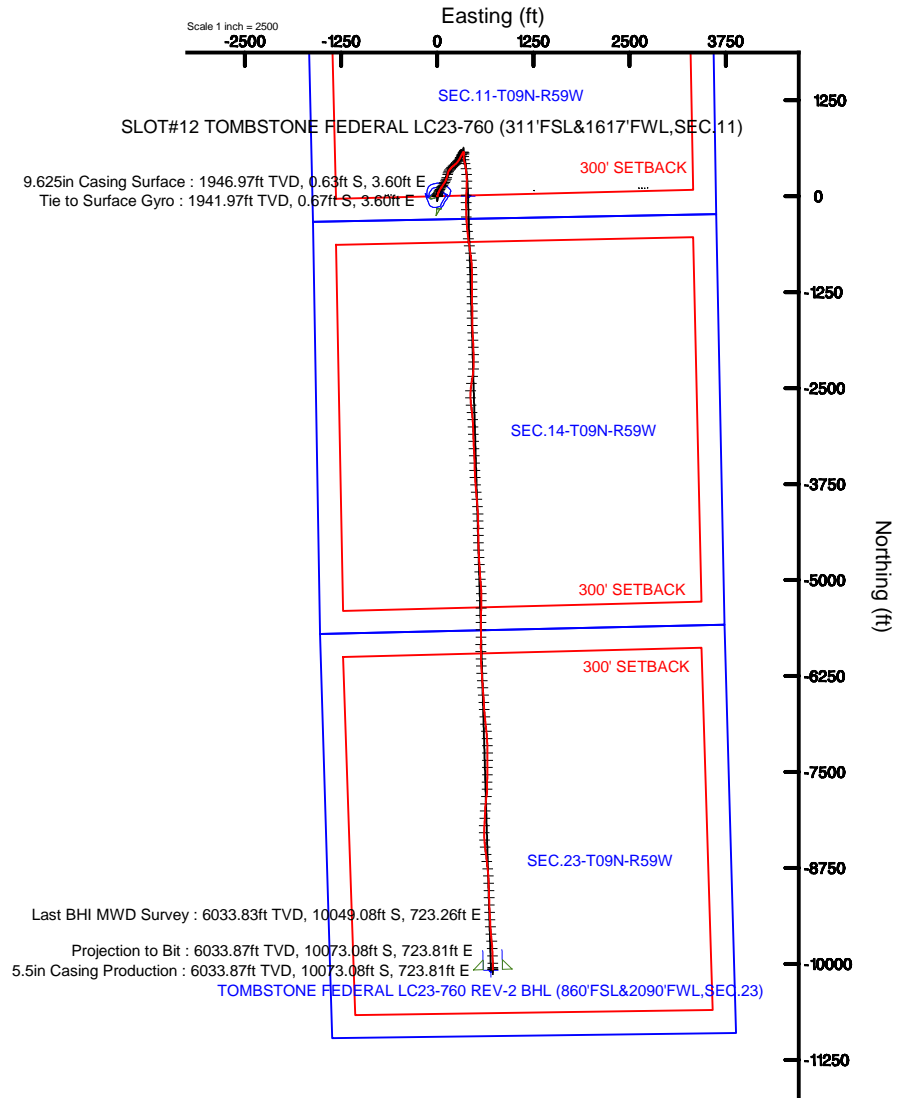
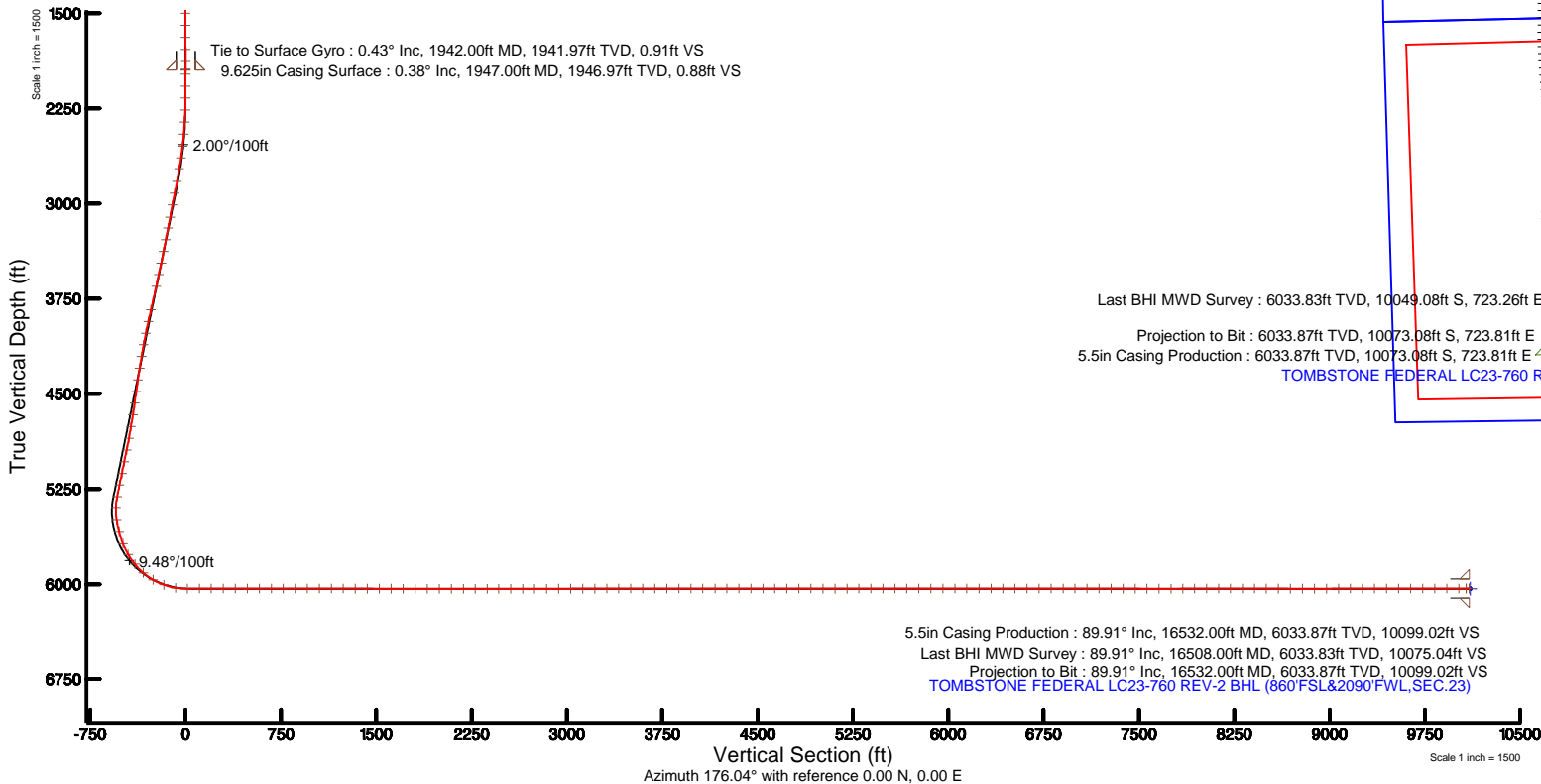
Plot reference wellpath is TOMBSTONE FEDERAL LC23-760 (REV-B.0) PWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to H&P (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to H&P (RKB)	North Reference: Grid north
H&P (RKB) to Mean Sea Level: 4990 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#12 TOMBSTONE FEDERAL LC23-760 (311°FSL&1617FWL,SEC.11)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: guenaler on 2017-01-25
	Database: WA_DEN_Deriver_Defn

Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.11-T09N-R59W			3430932.809	1523209.090	40°45'33.192"N	103°56'39.840"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#12 TOMBSTONE FEDERAL LC23-760 (311°FSL&1617FWL,SEC.11)	-73.08	-1259.43	3429673.387	1523136.012	40°45'32.688"N	103°56'56.220"W
H&P (RKB) to Mud line (At Slot: SLOT#12 TOMBSTONE FEDERAL LC23-760 (311°FSL&1617FWL,SEC.11))					4990ft	
Mean Sea Level to Mud line (At Slot: SLOT#12 TOMBSTONE FEDERAL LC23-760 (311°FSL&1617FWL,SEC.11))					0ft	
H&P (RKB) to Mean Sea Level					4990ft	

Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	16596.87	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		TOMBSTONE FEDERAL LC23-760 PWB



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#12 TOMBSTONE FEDERAL LC23-760 (311'FSL&1617'FWL,SEC.11)
Area	COLORADO	Well	TOMBSTONE FEDERAL LC23-760
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	TOMBSTONE FEDERAL LC23-760 AWB
Facility	SEC.11-T09N-R59W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Guenaler
Scale	0.999996	Report Generated	1/25/2017 at 4:56:06 PM
Convergence at slot	1.01° East	Database/Source file	WA_DEN_Denver_Defn/TOMBSTONE_FEDERAL_LC23-760_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-73.08	-1259.43	3429673.39	1523136.01	40°45'32.688"N	103°56'56.220"W
Facility Reference Pt			3430932.81	1523209.09	40°45'33.192"N	103°56'39.840"W
Field Reference Pt			3000000.00	4454105.15	48°46'34.315"N	105°30'00.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	H&P (RKB) to Facility Vertical Datum	4990.00ft
Horizontal Reference Pt	Slot	H&P (RKB) to Mean Sea Level	4990.00ft
Vertical Reference Pt	H&P (RKB)	H&P (RKB) to Mud Line at Slot (SLOT#12 TOMBSTONE FEDERAL LC23-760 (311'FSL&1617'FWL,SEC.11))	4990.00ft
MD Reference Pt	H&P (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	176.04°

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	TOMBSTONE FEDERAL LC23-760 AWB
Facility	SEC.11-T09N-R59W		

WELLPATH DATA (156 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
1942.00	0.430	2.320	1941.97	0.91	-0.67	3.60	40°45'32.681"N	103°56'56.173"W	0.51	Tie to Surface Gyro
1979.00	0.600	270.800	1978.97	0.76	-0.53	3.41	40°45'32.682"N	103°56'56.176"W	2.02	
2074.00	0.100	118.500	2073.97	0.76	-0.56	2.99	40°45'32.682"N	103°56'56.181"W	0.73	
2168.00	0.070	276.400	2167.97	0.80	-0.59	3.00	40°45'32.682"N	103°56'56.181"W	0.18	
2263.00	3.720	34.410	2262.90	-1.63	1.96	4.69	40°45'32.707"N	103°56'56.159"W	3.95	
2358.00	3.620	359.930	2357.72	-7.04	7.50	6.42	40°45'32.761"N	103°56'56.135"W	2.29	
2452.00	4.970	4.110	2451.45	-14.03	14.53	6.71	40°45'32.830"N	103°56'56.129"W	1.47	
2547.00	6.820	14.360	2545.95	-23.46	24.10	8.41	40°45'32.925"N	103°56'56.105"W	2.23	
2641.00	8.960	20.190	2639.06	-35.44	36.38	12.32	40°45'33.045"N	103°56'56.052"W	2.43	
2736.00	11.010	23.490	2732.61	-50.24	51.64	18.49	40°45'33.195"N	103°56'55.968"W	2.24	
2830.00	12.640	27.000	2824.62	-67.03	69.04	26.73	40°45'33.365"N	103°56'55.857"W	1.89	
2925.00	13.550	31.000	2917.15	-85.06	87.84	37.19	40°45'33.549"N	103°56'55.717"W	1.35	
3020.00	13.450	33.460	3009.52	-102.96	106.60	49.01	40°45'33.733"N	103°56'55.559"W	0.61	
3120.00	13.500	33.170	3106.77	-121.50	126.07	61.81	40°45'33.923"N	103°56'55.388"W	0.08	
3209.00	13.260	33.810	3193.35	-137.85	143.25	73.17	40°45'34.091"N	103°56'55.237"W	0.32	
3303.00	13.510	33.840	3284.80	-155.05	161.33	85.28	40°45'34.267"N	103°56'55.075"W	0.27	
3398.00	13.540	32.120	3377.17	-172.80	179.96	97.38	40°45'34.449"N	103°56'54.914"W	0.42	
3493.00	13.470	27.870	3469.54	-191.19	199.16	108.46	40°45'34.637"N	103°56'54.766"W	1.05	
3587.00	13.590	21.530	3560.94	-210.46	219.11	117.63	40°45'34.832"N	103°56'54.642"W	1.58	
3682.00	13.430	15.480	3653.31	-230.94	240.13	124.67	40°45'35.039"N	103°56'54.546"W	1.50	
3871.00	13.160	12.050	3837.25	-272.32	282.32	135.02	40°45'35.454"N	103°56'54.401"W	0.44	
3966.00	13.240	15.940	3929.74	-292.94	303.36	140.27	40°45'35.661"N	103°56'54.329"W	0.94	
4061.00	13.070	26.660	4022.27	-312.42	323.42	148.08	40°45'35.858"N	103°56'54.223"W	2.57	
4155.00	13.230	35.870	4113.81	-329.83	341.64	159.15	40°45'36.036"N	103°56'54.075"W	2.23	
4249.00	13.450	39.690	4205.28	-346.00	358.77	172.44	40°45'36.203"N	103°56'53.898"W	0.97	
4344.00	12.980	44.850	4297.76	-361.02	374.84	187.02	40°45'36.359"N	103°56'53.705"W	1.34	
4438.00	13.190	48.680	4389.32	-374.48	389.40	202.52	40°45'36.500"N	103°56'53.500"W	0.95	
4533.00	13.270	50.250	4481.80	-387.43	403.53	219.04	40°45'36.637"N	103°56'53.282"W	0.39	
4628.00	13.210	49.930	4574.28	-400.20	417.49	235.73	40°45'36.772"N	103°56'53.062"W	0.10	
4722.00	13.250	44.700	4665.79	-413.65	432.06	251.53	40°45'36.913"N	103°56'52.854"W	1.27	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#12 TOMBSTONE FEDERAL LC23-760 (311'FSL&161'FWL,SEC.11)
Area	COLORADO	Well	TOMBSTONE FEDERAL LC23-760
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	TOMBSTONE FEDERAL LC23-760 AWB
Facility	SEC.11-T09N-R59W		

WELLPATH DATA (156 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4817.00	13.260	38.070	4758.26	-428.93	448.38	265.90	40°45'37.072"N	103°56'52.663"W	1.60	
4912.00	13.220	32.880	4850.74	-445.72	466.08	278.52	40°45'37.244"N	103°56'52.495"W	1.25	
5006.00	13.210	27.500	4942.25	-463.48	484.63	289.31	40°45'37.426"N	103°56'52.351"W	1.31	
5101.00	13.440	27.900	5034.70	-482.12	504.02	299.49	40°45'37.616"N	103°56'52.214"W	0.26	
5196.00	13.560	28.220	5127.07	-500.92	523.59	309.92	40°45'37.807"N	103°56'52.074"W	0.15	
5290.00	13.520	29.590	5218.46	-519.40	542.85	320.56	40°45'37.996"N	103°56'51.932"W	0.34	
5385.00	13.610	28.510	5310.81	-538.09	562.33	331.38	40°45'38.186"N	103°56'51.787"W	0.28	
5479.00	5.710	75.460	5403.52	-548.31	573.26	341.21	40°45'38.292"N	103°56'51.656"W	11.23	
5574.00	9.040	166.230	5497.97	-541.80	567.18	347.58	40°45'38.231"N	103°56'51.575"W	11.31	
5668.00	15.150	193.550	5589.91	-522.78	548.03	346.46	40°45'38.042"N	103°56'51.594"W	8.74	
5763.00	22.380	181.830	5679.83	-492.90	517.83	342.97	40°45'37.745"N	103°56'51.646"W	8.55	
5858.00	30.230	166.580	5765.02	-451.20	476.38	347.95	40°45'37.334"N	103°56'51.591"W	10.84	
5952.00	39.040	167.220	5842.29	-398.50	424.39	360.02	40°45'36.819"N	103°56'51.446"W	9.38	
6047.00	49.310	171.350	5910.35	-332.85	359.42	372.09	40°45'36.175"N	103°56'51.304"W	11.22	
6142.00	60.250	175.300	5965.07	-255.46	282.46	380.91	40°45'35.413"N	103°56'51.207"W	12.00	
6236.00	69.990	180.190	6004.59	-170.37	197.38	384.12	40°45'34.572"N	103°56'51.184"W	11.38	
6331.00	81.100	182.370	6028.27	-78.91	105.56	382.02	40°45'33.665"N	103°56'51.232"W	11.90	
6425.00	90.620	182.750	6035.05	14.13	12.01	377.84	40°45'32.741"N	103°56'51.308"W	10.14	
6520.00	90.250	180.140	6034.32	108.69	-82.95	375.44	40°45'31.804"N	103°56'51.361"W	2.77	
6614.00	90.030	178.810	6034.09	202.52	-176.94	376.31	40°45'30.875"N	103°56'51.371"W	1.43	
6709.00	90.000	178.020	6034.07	297.44	-271.91	378.93	40°45'29.936"N	103°56'51.358"W	0.83	
6804.00	90.060	175.020	6034.02	392.43	-366.72	384.70	40°45'28.998"N	103°56'51.305"W	3.16	
6898.00	90.090	174.050	6033.90	486.39	-460.29	393.65	40°45'28.072"N	103°56'51.210"W	1.03	
6992.00	90.030	172.770	6033.80	580.29	-553.67	404.44	40°45'27.148"N	103°56'51.091"W	1.36	
7087.00	90.150	171.670	6033.65	675.08	-647.79	417.30	40°45'26.216"N	103°56'50.946"W	1.16	
7181.00	89.720	171.510	6033.76	768.80	-740.78	431.05	40°45'25.295"N	103°56'50.788"W	0.49	
7276.00	89.940	174.000	6034.04	863.63	-835.01	443.03	40°45'24.362"N	103°56'50.654"W	2.63	
7370.00	89.820	177.690	6034.23	957.62	-928.75	449.84	40°45'23.435"N	103°56'50.587"W	3.93	
7465.00	89.940	180.000	6034.43	1052.49	-1023.73	451.75	40°45'22.496"N	103°56'50.583"W	2.43	
7560.00	90.000	179.900	6034.48	1147.27	-1118.73	451.83	40°45'21.557"N	103°56'50.604"W	0.12	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#12 TOMBSTONE FEDERAL LC23-760 (311'FSL&161'FWL,SEC.11)
Area	COLORADO	Well	TOMBSTONE FEDERAL LC23-760
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	TOMBSTONE FEDERAL LC23-760 AWB
Facility	SEC.11-T09N-R59W		

WELLPATH DATA (156 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7654.00	89.970	179.700	6034.51	1241.07	-1212.72	452.16	40°45'20.629"N	103°56'50.621"W	0.22	
7749.00	89.940	179.360	6034.58	1335.89	-1307.72	452.94	40°45'19.690"N	103°56'50.633"W	0.36	
7843.00	89.820	178.970	6034.78	1429.75	-1401.71	454.31	40°45'18.761"N	103°56'50.636"W	0.43	
7938.00	89.910	179.340	6035.00	1524.61	-1496.70	455.71	40°45'17.823"N	103°56'50.640"W	0.40	
8032.00	90.000	181.300	6035.08	1618.35	-1590.69	455.19	40°45'16.894"N	103°56'50.668"W	2.09	
8127.00	89.780	177.630	6035.26	1713.16	-1685.67	456.07	40°45'15.956"N	103°56'50.678"W	3.87	
8221.00	89.970	176.650	6035.46	1807.14	-1779.55	460.76	40°45'15.027"N	103°56'50.638"W	1.06	
8316.00	89.940	177.170	6035.54	1902.13	-1874.42	465.88	40°45'14.089"N	103°56'50.593"W	0.55	
8410.00	89.940	178.320	6035.64	1996.09	-1968.34	469.58	40°45'13.161"N	103°56'50.567"W	1.22	
8505.00	89.850	178.160	6035.81	2091.02	-2063.30	472.50	40°45'12.222"N	103°56'50.550"W	0.19	
8600.00	89.970	179.660	6035.96	2185.89	-2158.28	474.31	40°45'11.283"N	103°56'50.549"W	1.58	
8694.00	90.030	184.370	6035.96	2279.36	-2252.19	471.00	40°45'10.356"N	103°56'50.613"W	5.01	
8789.00	90.150	188.650	6035.81	2372.75	-2346.56	460.24	40°45'09.426"N	103°56'50.774"W	4.51	
8883.00	90.000	189.400	6035.69	2464.35	-2439.39	445.49	40°45'08.511"N	103°56'50.987"W	0.81	
8978.00	90.090	183.960	6035.61	2557.68	-2533.71	434.44	40°45'07.581"N	103°56'51.152"W	5.73	
9073.00	90.060	177.850	6035.49	2652.29	-2628.66	432.94	40°45'06.643"N	103°56'51.193"W	6.43	
9167.00	90.000	173.080	6035.44	2746.26	-2722.33	440.37	40°45'05.716"N	103°56'51.118"W	5.07	
9262.00	90.220	173.340	6035.26	2841.14	-2816.67	451.61	40°45'04.783"N	103°56'50.993"W	0.36	
9356.00	90.060	175.940	6035.03	2935.11	-2910.25	460.39	40°45'03.857"N	103°56'50.900"W	2.77	
9451.00	90.090	177.310	6034.90	3030.10	-3005.08	465.98	40°45'02.919"N	103°56'50.849"W	1.44	
9546.00	90.090	178.640	6034.75	3125.04	-3100.02	469.34	40°45'01.980"N	103°56'50.827"W	1.40	
9640.00	90.120	177.620	6034.58	3218.98	-3193.97	472.40	40°45'01.051"N	103°56'50.809"W	1.09	
9735.00	90.180	176.530	6034.33	3313.96	-3288.84	477.25	40°45'00.113"N	103°56'50.767"W	1.15	
9829.00	90.060	177.240	6034.14	3407.95	-3382.70	482.36	40°44'59.185"N	103°56'50.722"W	0.77	
9924.00	90.060	178.780	6034.04	3502.89	-3477.64	485.66	40°44'58.247"N	103°56'50.701"W	1.62	
10019.00	90.000	178.470	6033.99	3597.79	-3572.62	487.94	40°44'57.308"N	103°56'50.693"W	0.33	
10113.00	90.030	176.290	6033.96	3691.76	-3666.51	492.23	40°44'56.379"N	103°56'50.659"W	2.32	
10208.00	90.030	175.970	6033.91	3786.76	-3761.29	498.65	40°44'55.442"N	103°56'50.597"W	0.34	
10302.00	89.880	174.460	6033.99	3880.75	-3854.96	506.49	40°44'54.515"N	103°56'50.516"W	1.61	
10397.00	90.090	175.090	6034.01	3975.72	-3949.57	515.14	40°44'53.579"N	103°56'50.426"W	0.70	

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	TOMBSTONE FEDERAL LC23-760 AWB
Facility	SEC.11-T09N-R59W		

WELLPATH DATA (156 stations)										
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10491.00	89.880	175.620	6034.04	4069.72	-4043.26	522.75	40°44'52.652"N	103°56'50.348"W	0.61	
10586.00	90.000	176.720	6034.14	4164.72	-4138.05	529.10	40°44'51.715"N	103°56'50.287"W	1.16	
10680.00	90.060	178.570	6034.09	4258.67	-4231.96	532.96	40°44'50.786"N	103°56'50.258"W	1.97	
10775.00	90.000	180.400	6034.04	4353.50	-4326.95	533.81	40°44'49.847"N	103°56'50.269"W	1.93	
10869.00	89.940	179.560	6034.09	4447.28	-4420.95	533.84	40°44'48.919"N	103°56'50.290"W	0.90	
10964.00	90.150	178.740	6034.01	4542.13	-4515.94	535.25	40°44'47.980"N	103°56'50.293"W	0.89	
11058.00	89.780	177.550	6034.07	4636.07	-4609.89	538.30	40°44'47.051"N	103°56'50.275"W	1.33	
11153.00	90.000	176.580	6034.25	4731.05	-4704.77	543.16	40°44'46.113"N	103°56'50.233"W	1.05	
11248.00	89.910	176.270	6034.33	4826.05	-4799.58	549.08	40°44'45.175"N	103°56'50.178"W	0.34	
11342.00	89.910	176.730	6034.47	4920.05	-4893.40	554.82	40°44'44.248"N	103°56'50.125"W	0.49	
11437.00	89.910	175.960	6034.62	5015.04	-4988.21	560.88	40°44'43.310"N	103°56'50.068"W	0.81	
11531.00	89.880	175.080	6034.80	5109.04	-5081.92	568.22	40°44'42.383"N	103°56'49.994"W	0.94	
11626.00	90.250	178.610	6034.69	5204.02	-5176.76	573.45	40°44'41.445"N	103°56'49.947"W	3.74	
11720.00	90.150	181.180	6034.36	5297.79	-5270.75	573.62	40°44'40.516"N	103°56'49.966"W	2.74	
11815.00	90.180	181.180	6034.09	5392.41	-5365.73	571.67	40°44'39.578"N	103°56'50.013"W	0.03	
11909.00	89.970	180.400	6033.96	5486.09	-5459.72	570.37	40°44'38.650"N	103°56'50.052"W	0.86	
12004.00	90.060	180.450	6033.94	5580.81	-5554.72	569.66	40°44'37.711"N	103°56'50.082"W	0.11	
12098.00	90.220	180.760	6033.71	5674.51	-5648.72	568.67	40°44'36.783"N	103°56'50.117"W	0.37	
12193.00	90.150	180.280	6033.40	5769.22	-5743.71	567.81	40°44'35.845"N	103°56'50.150"W	0.51	
12288.00	90.000	180.650	6033.28	5863.93	-5838.71	567.04	40°44'34.906"N	103°56'50.181"W	0.42	
12382.00	89.880	178.930	6033.38	5957.73	-5932.70	567.38	40°44'33.978"N	103°56'50.198"W	1.83	
12477.00	90.060	179.060	6033.43	6052.60	-6027.69	569.05	40°44'33.039"N	103°56'50.198"W	0.23	
12571.00	90.060	176.380	6033.33	6146.55	-6121.61	572.79	40°44'32.110"N	103°56'50.171"W	2.85	
12666.00	90.090	175.480	6033.20	6241.55	-6216.37	579.53	40°44'31.173"N	103°56'50.105"W	0.95	
12761.00	89.970	176.700	6033.15	6336.55	-6311.14	586.01	40°44'30.236"N	103°56'50.042"W	1.29	
12855.00	90.000	176.000	6033.18	6430.55	-6404.95	591.99	40°44'29.308"N	103°56'49.986"W	0.75	
12950.00	89.910	174.570	6033.25	6525.54	-6499.63	599.80	40°44'28.371"N	103°56'49.906"W	1.51	
13044.00	89.850	178.030	6033.45	6619.52	-6593.42	605.87	40°44'27.443"N	103°56'49.848"W	3.68	
13139.00	89.970	175.900	6033.60	6714.50	-6688.28	610.90	40°44'26.505"N	103°56'49.805"W	2.25	
13233.00	90.000	173.940	6033.62	6808.48	-6781.90	619.22	40°44'25.579"N	103°56'49.718"W	2.09	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#12 TOMBSTONE FEDERAL LC23-760 (311'FSL&161'FWL,SEC.11)
Area	COLORADO	Well	TOMBSTONE FEDERAL LC23-760
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	TOMBSTONE FEDERAL LC23-760 AWB
Facility	SEC.11-T09N-R59W		

WELLPATH DATA (156 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
13328.00	89.910	174.140	6033.70	6903.42	-6876.39	629.08	40°44'24.644"N	103°56'49.611"W	0.23	
13422.00	89.850	174.350	6033.89	6997.38	-6969.92	638.51	40°44'23.718"N	103°56'49.510"W	0.23	
13517.00	90.000	175.720	6034.02	7092.36	-7064.56	646.73	40°44'22.782"N	103°56'49.425"W	1.45	
13611.00	89.820	177.710	6034.17	7186.35	-7158.40	652.12	40°44'21.854"N	103°56'49.376"W	2.13	
13706.00	89.910	179.930	6034.39	7281.23	-7253.37	654.07	40°44'20.915"N	103°56'49.372"W	2.34	
13800.00	89.880	180.140	6034.56	7375.00	-7347.37	654.02	40°44'19.986"N	103°56'49.395"W	0.23	
13895.00	89.850	180.580	6034.79	7469.73	-7442.37	653.42	40°44'19.048"N	103°56'49.424"W	0.46	
13990.00	89.880	181.360	6035.01	7564.38	-7537.35	651.81	40°44'18.110"N	103°56'49.466"W	0.82	
14084.00	89.880	181.570	6035.21	7657.96	-7631.32	649.41	40°44'17.182"N	103°56'49.519"W	0.22	
14179.00	90.030	180.280	6035.28	7752.61	-7726.31	647.87	40°44'16.244"N	103°56'49.561"W	1.37	
14273.00	90.770	188.150	6034.62	7845.58	-7819.98	640.97	40°44'15.319"N	103°56'49.672"W	8.41	
14368.00	89.940	186.130	6034.04	7938.79	-7914.23	629.16	40°44'14.390"N	103°56'49.846"W	2.30	
14463.00	90.000	181.690	6034.09	8032.87	-8008.99	622.69	40°44'13.455"N	103°56'49.952"W	4.67	
14557.00	89.780	183.000	6034.27	8126.30	-8102.91	618.84	40°44'12.528"N	103°56'50.023"W	1.41	
14652.00	90.000	183.800	6034.45	8220.52	-8197.74	613.21	40°44'11.592"N	103°56'50.118"W	0.87	
14746.00	90.030	179.710	6034.42	8314.03	-8291.68	610.33	40°44'10.664"N	103°56'50.177"W	4.35	
14841.00	89.880	176.270	6034.50	8408.96	-8386.60	613.66	40°44'09.726"N	103°56'50.155"W	3.62	
14935.00	89.880	173.280	6034.69	8502.93	-8480.20	622.22	40°44'08.800"N	103°56'50.065"W	3.18	
15030.00	89.970	172.490	6034.82	8597.78	-8574.47	633.99	40°44'07.867"N	103°56'49.934"W	0.84	
15124.00	89.910	173.520	6034.92	8691.65	-8667.77	645.43	40°44'06.943"N	103°56'49.806"W	1.10	
15219.00	89.850	174.000	6035.12	8786.57	-8762.21	655.76	40°44'06.008"N	103°56'49.694"W	0.51	
15313.00	90.060	176.280	6035.19	8880.56	-8855.86	663.72	40°44'05.081"N	103°56'49.612"W	2.44	
15408.00	90.150	178.170	6035.02	8975.53	-8950.75	668.32	40°44'04.143"N	103°56'49.573"W	1.99	
15503.00	90.180	177.670	6034.74	9070.48	-9045.68	671.77	40°44'03.205"N	103°56'49.550"W	0.53	
15597.00	90.180	178.680	6034.45	9164.41	-9139.63	674.76	40°44'02.276"N	103°56'49.533"W	1.07	
15692.00	90.120	177.940	6034.20	9259.34	-9234.59	677.57	40°44'01.337"N	103°56'49.518"W	0.78	
15786.00	90.150	176.800	6033.98	9353.31	-9328.49	681.88	40°44'00.409"N	103°56'49.483"W	1.21	
15881.00	90.060	177.190	6033.80	9448.30	-9423.36	686.86	40°43'59.471"N	103°56'49.440"W	0.42	
15976.00	90.090	176.820	6033.68	9543.28	-9518.23	691.82	40°43'58.533"N	103°56'49.397"W	0.39	
16070.00	90.000	174.450	6033.61	9637.27	-9611.95	698.98	40°43'57.605"N	103°56'49.326"W	2.52	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#12 TOMBSTONE FEDERAL LC23-760 (311'FSL&1617'FWL,SEC.11)
Area	COLORADO	Well	TOMBSTONE FEDERAL LC23-760
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	TOMBSTONE FEDERAL LC23-760 AWB
Facility	SEC.11-T09N-R59W		

WELLPATH DATA (156 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
16165.00	90.060	174.620	6033.56	9732.24	-9706.52	708.02	40°43'56.670"N	103°56'49.230"W	0.19	
16260.00	89.970	176.470	6033.53	9827.23	-9801.23	715.40	40°43'55.733"N	103°56'49.155"W	1.95	
16354.00	89.910	178.450	6033.63	9921.20	-9895.13	719.57	40°43'54.804"N	103°56'49.123"W	2.11	
16449.00	89.940	178.710	6033.75	10016.11	-9990.10	721.92	40°43'53.865"N	103°56'49.114"W	0.28	
16508.00	89.910	178.690	6033.83	10075.04	-10049.08	723.26	40°43'53.282"N	103°56'49.110"W	0.06	
16532.00	89.910	178.690	6033.87	10099.02	-10073.08	723.81	40°43'53.045"N	103°56'49.108"W	0.00	

HOLE & CASING SECTIONS										
- Ref Wellbore: TOMBSTONE FEDERAL LC23-760 AWB					Ref Wellpath: TOMBSTONE FEDERAL LC23-760 AWP					
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]	
13.5in Conductor	30.00	1947.00	1917.00	30.00	1946.97	0.01	-0.01	-0.63	3.60	
9.625in Casing Surface	30.00	1947.00	1917.00	30.00	1946.97	0.01	-0.01	-0.63	3.60	
8.5in Open Hole	1947.00	16532.00	14585.00	1946.97	6033.87	-0.63	3.60	-10073.08	723.81	
5.5in Casing Production	30.00	16532.00	16502.00	30.00	6033.87	0.01	-0.01	-10073.08	723.81	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#12 TOMBSTONE FEDERAL LC23-760 (311'FSL&1617'FWL,SEC.11)
Area	COLORADO	Well	TOMBSTONE FEDERAL LC23-760
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	TOMBSTONE FEDERAL LC23-760 AWB
Facility	SEC.11-T09N-R59W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.11-T09N-R59W	22.00	74.39	1334.22	3431007.60	1523210.40	40°45'33.192"N	103°56'38.868"W	polygon
SEC.14-T09N-R59W	22.00	74.39	1334.22	3431007.60	1523210.40	40°45'33.192"N	103°56'38.868"W	polygon
SEC.23-T09N-R59W	22.00	74.39	1334.22	3431007.60	1523210.40	40°45'33.192"N	103°56'38.868"W	polygon
SEC.11-T09N-R59W 300' SETBACK	6022.00	74.39	1334.22	3431007.60	1523210.40	40°45'33.192"N	103°56'38.868"W	polygon
SEC.14-T09N-R59W 300' SETBACK	6022.00	74.39	1334.22	3431007.60	1523210.40	40°45'33.192"N	103°56'38.868"W	polygon
SEC.23-T09N-R59W 300' SETBACK	6022.00	74.39	1334.22	3431007.60	1523210.40	40°45'33.192"N	103°56'38.868"W	polygon
TOMBSTONE FEDERAL LC23-760 Landing Point (300'FSL&2028'FWL,SEC.11)	6035.00	0.00	400.00	3430073.39	1523136.01	40°45'32.619"N	103°56'51.023"W	point
TOMBSTONE FEDERAL LC23-760 REV-1 BHL FROM PLAT (810'FSL&2090'FWL,SEC.23)	6035.00	-10132.36	698.37	3430371.75	1513003.71	40°43'52.464"N	103°56'49.452"W	point
TOMBSTONE FEDERAL LC23-760 REV-2 BHL (860'FSL&2090'FWL,SEC.23)	6035.00	-10082.37	698.37	3430371.75	1513053.71	40°43'52.958"N	103°56'49.441"W	point

WELLPATH COMPOSITION - Ref Wellbore: TOMBSTONE FEDERAL LC23-760 AWB				Ref Wellpath: TOMBSTONE FEDERAL LC23-760 AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	
0.00	1942.00	Gyrodata standard - Drop gyro or Multi-shot	Gyrodata Surface Survey <80'-1942'>	TOMBSTONE FEDERAL LC23-760 AWB	
1942.00	16508.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BHI/ATC OWSG MWD+IFR+MSA <1979'-16508'>	TOMBSTONE FEDERAL LC23-760 AWB	
16508.00	16532.00	Blind Drilling (std)	Projection to bit	TOMBSTONE FEDERAL LC23-760 AWB	



Actual Wellpath Report
TOMBSTONE FEDERAL LC23-760 AWP
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#12 TOMBSTONE FEDERAL LC23-760 (311'FSL&1617'FWL,SEC.11)
Area	COLORADO	Well	TOMBSTONE FEDERAL LC23-760
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	TOMBSTONE FEDERAL LC23-760 AWB
Facility	SEC.11-T09N-R59W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1942.00	0.430	2.320	1941.97	Tie to Surface Gyro